SonoSite™

SiteStand™ Mobile Docking Station

Service Manual

SonoSite

Imagine What You Can Do

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Manufactured for

SonoSite, Inc.

21919 30th Drive SE

Bothell, WA, USA 98021-3904

Telephone: 1-888-482-9449 or +1-425-951-1200

Fax: +1-425-951-1201

European Headquarters

SonoSite

P.O. Box 4

St. Neots

PE19 6LR

England

Telephone: +44-1480-217-522

Fax: +44-1480-217-489

Asia Headquarters

SonoSite

Suite 2201, 50 Gloucester Road

Wanchai, Hong Kong

Telephone: +852-2529-2881

Fax: +852-2529-5881

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CHAPTER 1

Introduction

Before servicing the SiteStand mobile docking station (SiteStand), read and be familiar with the information in this manual.

1.1 Description

The SiteStand (Figure 1.1) provides power, video, print, and image transfer capabilities for the system. The SiteStand has storage for two transducers and a tray for a recommended black-and-white printer. It provides the following connections: three video ports, an RS-232C port, a printer control port, and two AC mains IEC power receptacles. You can also tilt the system and adjust the height of the system when it is in the docking station.

1.2 Setup and Operation

For setup and operation of the SiteStand, refer to the *SiteStand User Guide (P01542-01).*

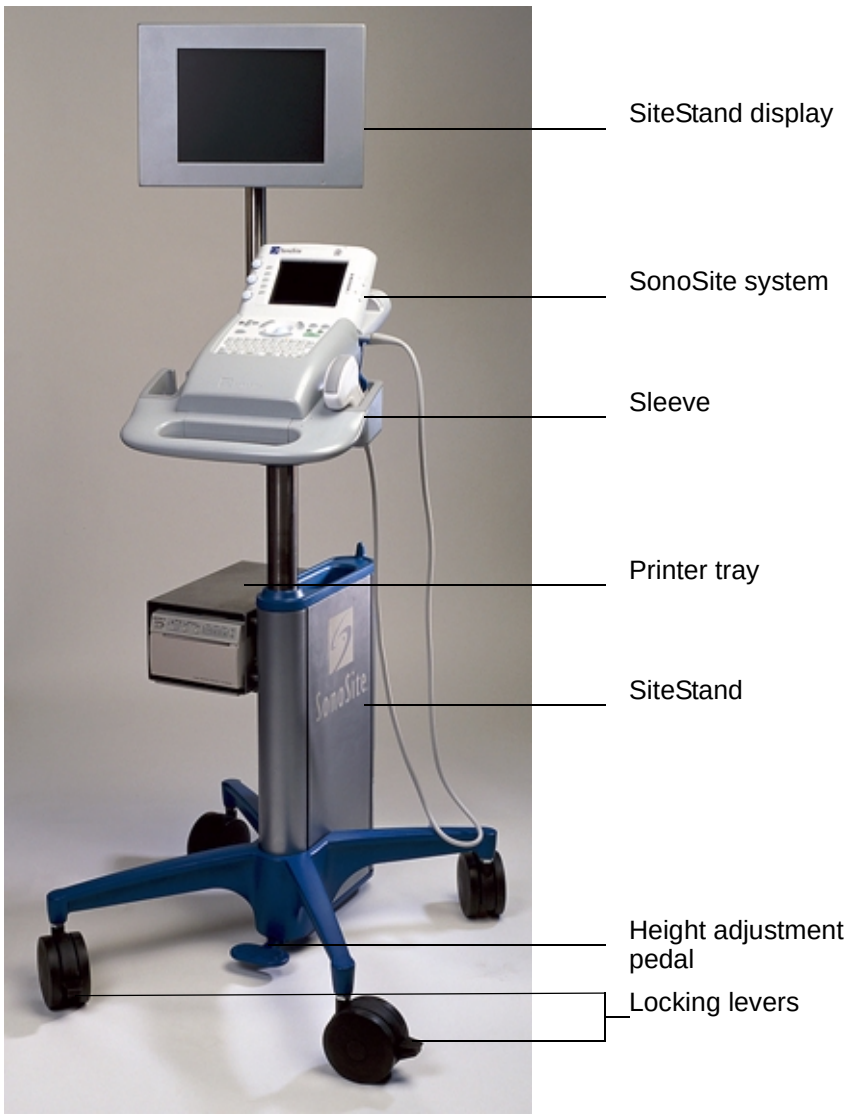


Figure 1.1 SiteStand with Display

1.3 Specifications

1.3.1 SiteStand

1.3.1.1 Electrical

SiteStand input: 100-120/220-240 VAC, 50/60 Hz, 1.0-0.50 A.

SiteStand outputs: + 16Vdc, 2.8 A. and 100-120/220-240 VAC, 50/60 Hz, 2.0 A. (2x)

AC power adapter input: 100-120/220-240 VAC, 50/60 Hz, 1.0-0.50 A.

AC power adapter output: + 16Vdc, 2.8 A.

1.3.2 SiteStand Display

1.3.2.1 Display Type

TFT LCD 640 x 480 pixels

1.3.2.2 Electrical

SiteStand flat panel display input: + 12VDC, 2.75 A.

AC power adapter input: 100-120/220-240 VAC, 50/60 Hz, 0.85 A maximum.

AC power adapter output: + 12VDC, 2.75 A.

CHAPTER 2

Safety

Please read this information before servicing the SiteStand.

A ***WARNING*** describes precautions necessary to prevent injury or loss of life.

A ***CAUTION*** describes precautions necessary to protect the products.

2.1 Electrical Safety

For maximum safety observe the following warnings and cautions:

WARNINGS:

Shock hazards exist if the AC power adapter is not properly grounded. Grounding reliability can only be achieved when equipment is connected to a receptacle marked "Hospital Only," "Hospital Grade," or the equivalent. The grounding wire must not be removed or defeated.

To avoid the risk of electrical shock and fire hazard, inspect the AC power adapter cord and plug on a regular basis. Ensure they are not damaged.

Connection of peripherals not recommended by SonoSite could result in electrical shock. Avoid electrical shock hazards by using peripherals and accessory cables recommended by SonoSite.

To avoid the risk of electrical shock, use commercial grade peripherals recommended by SonoSite on battery power only. Do not connect these product to AC mains power when using the system to scan or diagnose a patient/subject. Call SonoSite technical support or your local representative for a list of the commercial grade peripherals available from or recommended by SonoSite.

CAUTIONS:

Electrostatic discharge (ESD), or static shock, is a naturally occurring phenomenon. ESD is common in conditions of low humidity, which can be caused by heating or

air conditioning. Static shock is a discharge of the electrical energy from a charged body to a lesser or non-charged body. The degree of discharge can be significant enough to cause damage to a transducer or an ultrasound system. The following precautions can help reduce ESD: anti-static spray on carpets, anti-static spray on linoleum, and anti-static mats.

For labeling symbols used with the SiteStand, please refer to the *SonoSite 180 or SonoHeart User Guide*. For information about the flat panel display, please refer to the *Operating Instructions for the Series DV-3000 Colour LCD Rugged Monitor*.

2.1.1 Equipment Protection

To protect your ultrasound system, transducer, and accessories, follow these precautions.

CAUTIONS:

Excessive bending or twisting of cables can cause a failure or intermittent operation.

Improper cleaning or disinfecting of any part of the system can cause permanent damage.

Do not handle PCBs without proper static protection. Damage to components may result from improper handling.

2.1.2 Electrical Safety Testing

**Note*: *300uA is the limit for 120V stands only!*

Table 2.1 Acceptable Earth Leakage Current Values

AC VOLTAGE	LEAKAGE CURRENT (UA)	
	NC	SFC
100 - 240	0 < I < 300 / 500 (*)	0 < I < 1000

CHAPTER 3

Servicing the SiteStand

3.1 Introduction

Before servicing the SiteStand, read and be familiar with the information in this manual. The SiteStand assembly drawings and part lists are located in **Appendix A,** *Schematic and Parts List* on page 13.

3.1.1 Contacting SonoSite Technical Support

For technical support or to order spare parts, do one of the following:

- For U.S. customers, call 1-877-657-8118.
- For international customers, call +425-951-1330.
- Connect to SonoSite on the World Wide Web at www.sonosite.com. Select **Products**, then choose **Technical Support**.
- E-mail service @sonosite.com

3.2 Troubleshooting the SiteStand

The intent of this section is to help isolate potential problems associated with the SiteStand. Table 3.1 provides an observation of the problem, the possible cause, and the corrective action for the SiteStand.

Table 3.1 SiteStand Troubleshooting

OBSERVATION	POSSIBLE CAUSE	CORRECTIVE ACTION
The system battery doesn't charge in the SiteStand.	If the charge function of the system is acceptable, the possible causes are: • the power supply has failed or become disconnected • the dock PCBA located in the sleeve assembly has failed • the docking connectors on the sleeve assembly are broken or bent.	Verify the SiteStand is at fault by attempting to charge the battery with the power supply connected directly to the system. If it does not charge, refer to the *SonoSite 180 Service Manual* for troubleshooting.
There is no video from the SiteStand video out connection.	The SiteStand docking PCBA has failed. The docking connections or the sleeve assembly have been broken.	See *Replacing the Sleeve Assembly and the Docking PCBA* on page 9.
There is no AC power from the SiteStand power connection.	The SiteStand fuse has failed.	See *Replacing the SiteStand Fuse* on page 10.
There is no remote printer control to the printer on the SiteStand.	The printer remote control cable has failed or is not attached correctly.	Replace the printer remote cable (P00762).
There is no output from the RS-232 communication port.	The SiteStand docking PCBA has failed. The docking connections on the sleeve assembly are broken or bent.	See *Replacing the Sleeve Assembly and the Docking PCBA* on page 9.
The sleeve assembly does not raise or lower.	The foot pedal is damaged. The gas spring is loose or damaged. The foot pedal has fallen off.	See *Replacing the Foot Pedal* on page 9.
The SiteStand does not roll easily or in a straight line.	A castor(s) is broken or bent. The SiteStand base is damaged.	Replace the failed part.

3.3 Disassembling the SiteStand

Disassembly of the SiteStand is dependent on the repairs required. The following order of disassembly is recommended in order to prevent damage to the SiteStand and facilitate efficient repairs. The service provider should use good judgement in altering this order to provide repairs to various parts of the SiteStand.

3.3.1 Required Tools

- #1 Phillips screwdriver
- Allen wrench set (5/32-inch, 1/8-inch, and 5/64-inch)
- Slotted screwdriver
- Open end wrench (11/16-inch)
- Round punch (1/4-inch)

3.3.2 Replacing the Sleeve Assembly and the Docking PCBA

1. Tilt the sleeve assembly to its most upright position.
2. Use a #1 Philips screwdriver to remove the six screws from the metal base of the sleeve assembly.
3. Turn the sleeve assembly over and remove the two screws holding the cable connector to the sleeve assembly.
4. Unplug the connectors and set the sleeve assembly aside.
5. Remove the five Phillips screws attaching the PCBA to the sleeve assembly.

3.3.3 Replacing the Power Supply

1. Lay the SiteStand on a bench with the base facing you.
2. Use an Allen wrench to remove the four 5/32-inch Allen screws holding the base.
3. Remove the base and set it aside.
4. Use an Allen wrench to remove to remove the six 5/32-inch Allen screws and the 11/16-inch nut on the gas spring securing the subplate.
5. Remove the subplate.
6. The power supply is visible in the forward section of the SiteStand and is secured by Velcro. Pull the power supply loose and disconnect the connectors.
7. To reassemble the SiteStand follow steps 1 through 6 in reverse order.

3.3.4 Replacing the Foot Pedal

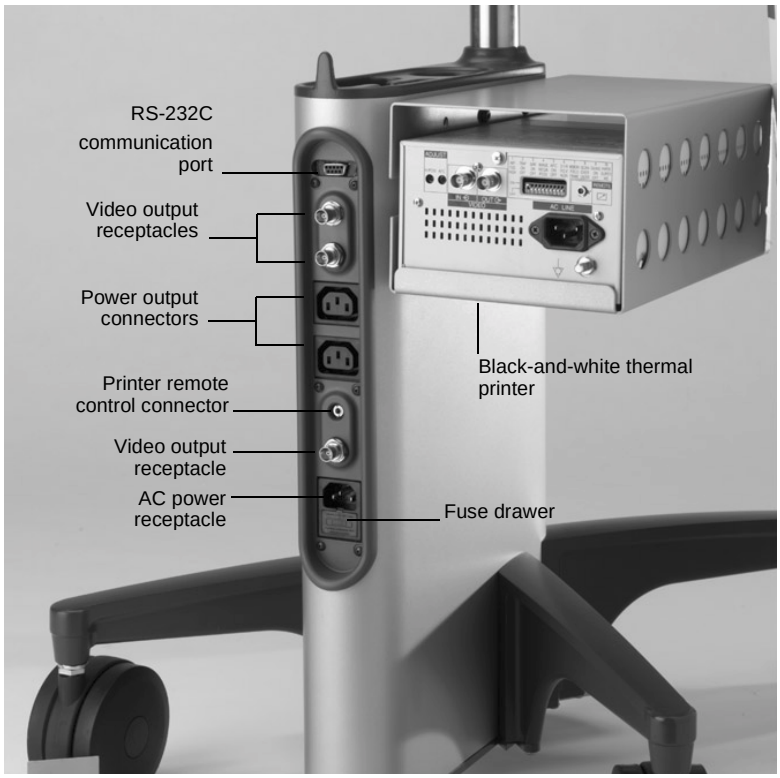
Earlier versions of the SiteStand use a pin to hold the foot pedal in place. If the pin has become loose, you should replace the foot pedal with foot pedal repair kit (P01321).

1. Remove the pin using any round punch.
2. Install the foot pedal using the shoulder bolt in place of the pin.
3. Attach the locking nut and tighten so the nut is secure and that the foot pedal moves freely.

3.3.5 Repairing/Replacing the Front Panel Connectors

1. To access these connectors, use an Allen wrench to remove the six connector cover 5/64-inch Allen screws.
2. Extend the gas spring to its maximum height by pressing the foot pedal.
3. Remove the blade cap by gently prying it up from the sides with a flat blade prying tool. There are no screws holding it in place.
4. Use an Allen wrench to remove the eight 5/32-inch Allen screws from the top subplate.
5. Left the blade cap and subplate to the top of the shaft and secure it in place.
6. Gently pull the connector assembly out the top of the blade assembly.
7. The connector can now be repaired or replaced.
8. Reassemble the SiteStand by performing steps 1 through 8 (in this section) in reverse order.

3.3.6 Replacing the SiteStand Fuse



To replace the electrical fuse:

1. Disconnect the AC line cord from the hospital-grade electrical outlet.
2. Disconnect the AC line cord from the bottom of the SiteStand mobile docking station.
3. Use a small, slotted screwdriver to remove the fuse drawer (located directly below the input AC receptacle on the SiteStand mobile docking station).

   CAUTION: You should identify the cause of the blown fuse prior to plugging the docking station back into AC power.
4. Carefully replace the blown fuse with a 250 volt, 6.3 amp, 5.0 x 20 mm Slo-Blo®-type fuse.
5. Install the fuse drawer.
6. Connect the AC power to the SiteStand mobile docking station.

3.4 SiteStand Performance Tests

3.4.1 Setup

- Install a SonoSite 180 or SonoHeart, without a battery into the docking station
- Apply AC power, 120V 60Hz to SiteStand “AC in” receptacle

3.4.2 AC Power Verification

Use an AC Tester to verify both IEC output receptacles are wired correctly.

3.4.3 Docking Video

- Turn on the system.
- Connect a Test Monitor to each of the video outputs on the docking stand.
- Verify the same video pattern exists on the Test Monitor as is present on the System LCD Display.

3.4.4 RS-232

The RS-232 interface can only be field tested using the SiteLink Image Management software. If that software is installed, verify the information on the PC according to the SiteLink Image Management User Guide on the SiteLink CD-ROM.

3.4.5 Printer Interface

1. Connect the black and white video printer to the SiteStand. Ensure that the control and AC power cables are attached, but not the video cable.
2. Verify that the printer produces an audible beep and that the user interface replies with its own tone.

3. Repeat steps 1 and 2 (above) at least one more time to verify that the status line is connected.

APPENDIX A Schematic and Parts List

This section contains a list of field-replaceable parts.

A.1 Schematic and Wiring Diagram

A schematic and a wiring diagram are provided for the SiteStand and the docking stand PCB.

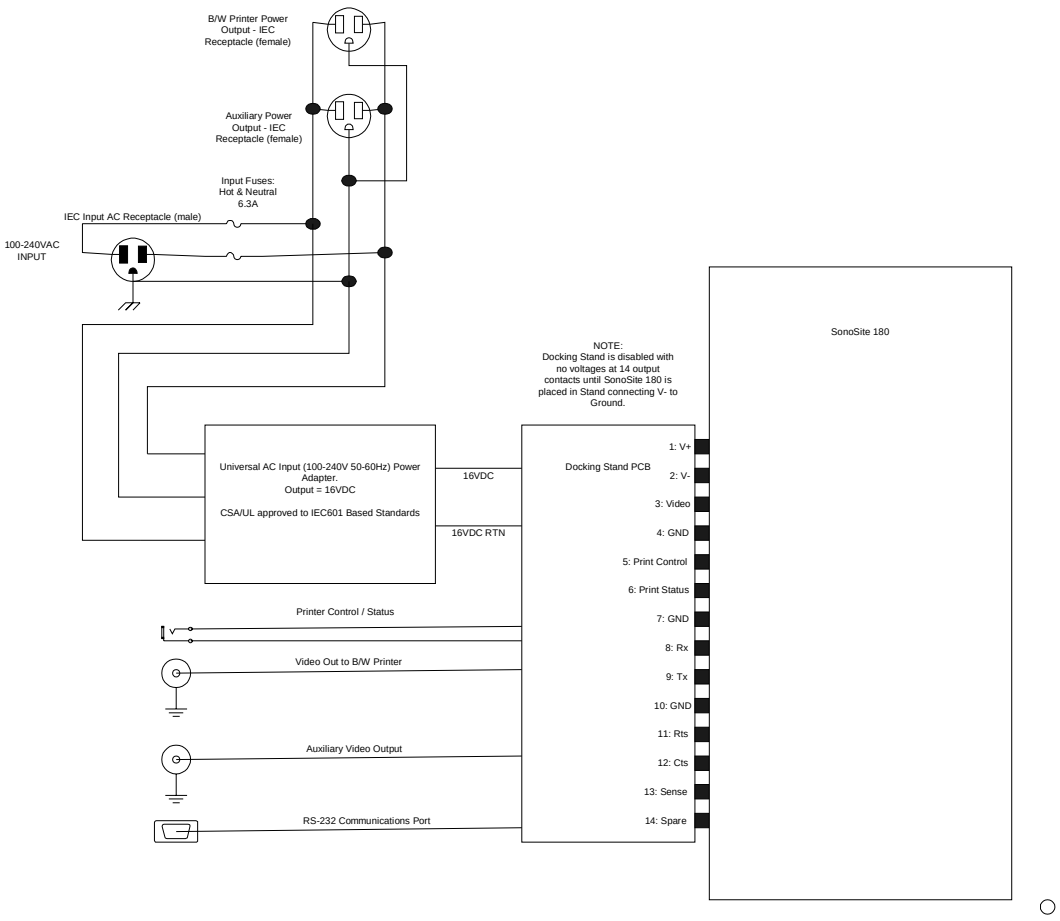
A.2 Replacement Parts List

The following tables contain all the replaceable parts for the SiteStand. All quantities are one unless otherwise noted.

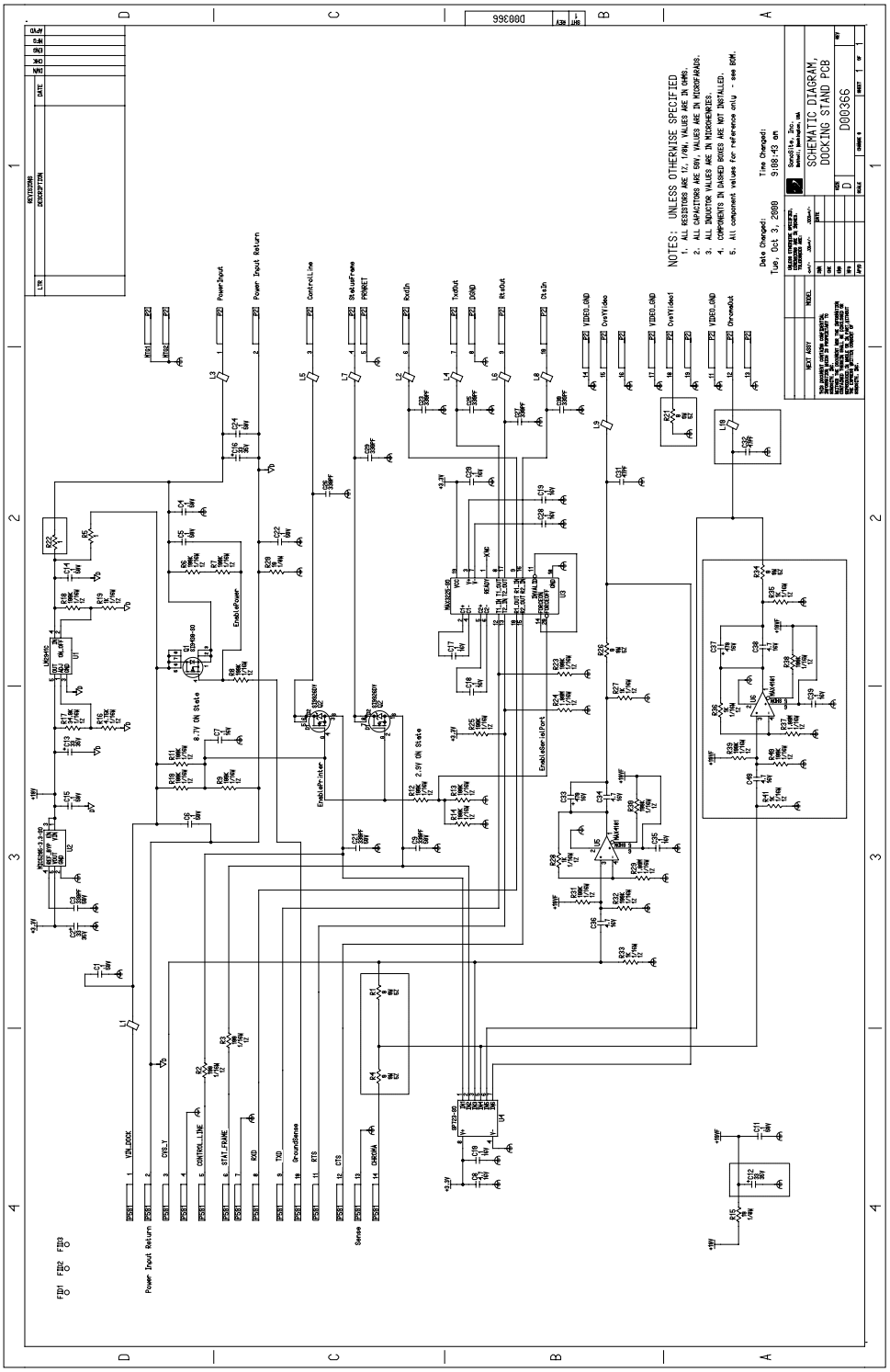
A.3 Ordering Replacement Parts

To order parts, contact SonoSite technical support at 1-877-657-8118 (U.S.) or +425-951-1330 (international).

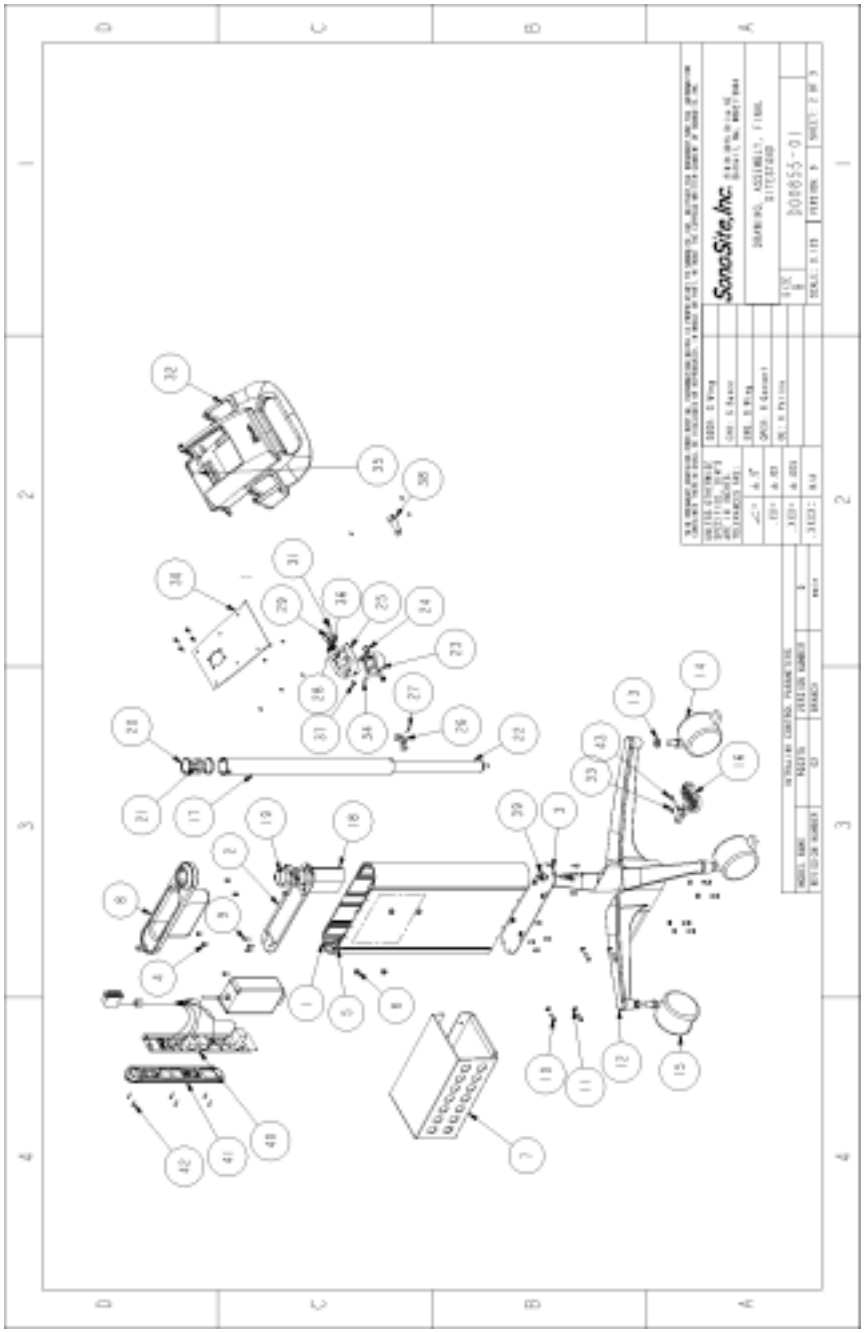
A.4 SiteStand Wiring Diagram



A.5 Schematic Diagram, Docking Stand PCB


SCHEMATIC DIAGRAM;
DOCKING STAND PCB
D00366
NOTES: UNLESS OTHERWISE SPECIFIED
1. ALL RESISTORS ARE 1/4W, VALUES ARE IN OHMS.
2. ALL CAPACITORS ARE 50V, VALUES ARE IN MICROFARADS.
3. ALL INDUCTORS ARE IN MICROHENRYS.
4. COMPONENTS IN DASHED BOXES ARE NOT INSTALLED.
5. All component values for reference only - see BOM.

A.6 SiteStand Assembly



A.7 SiteStand Sleeve Assembly

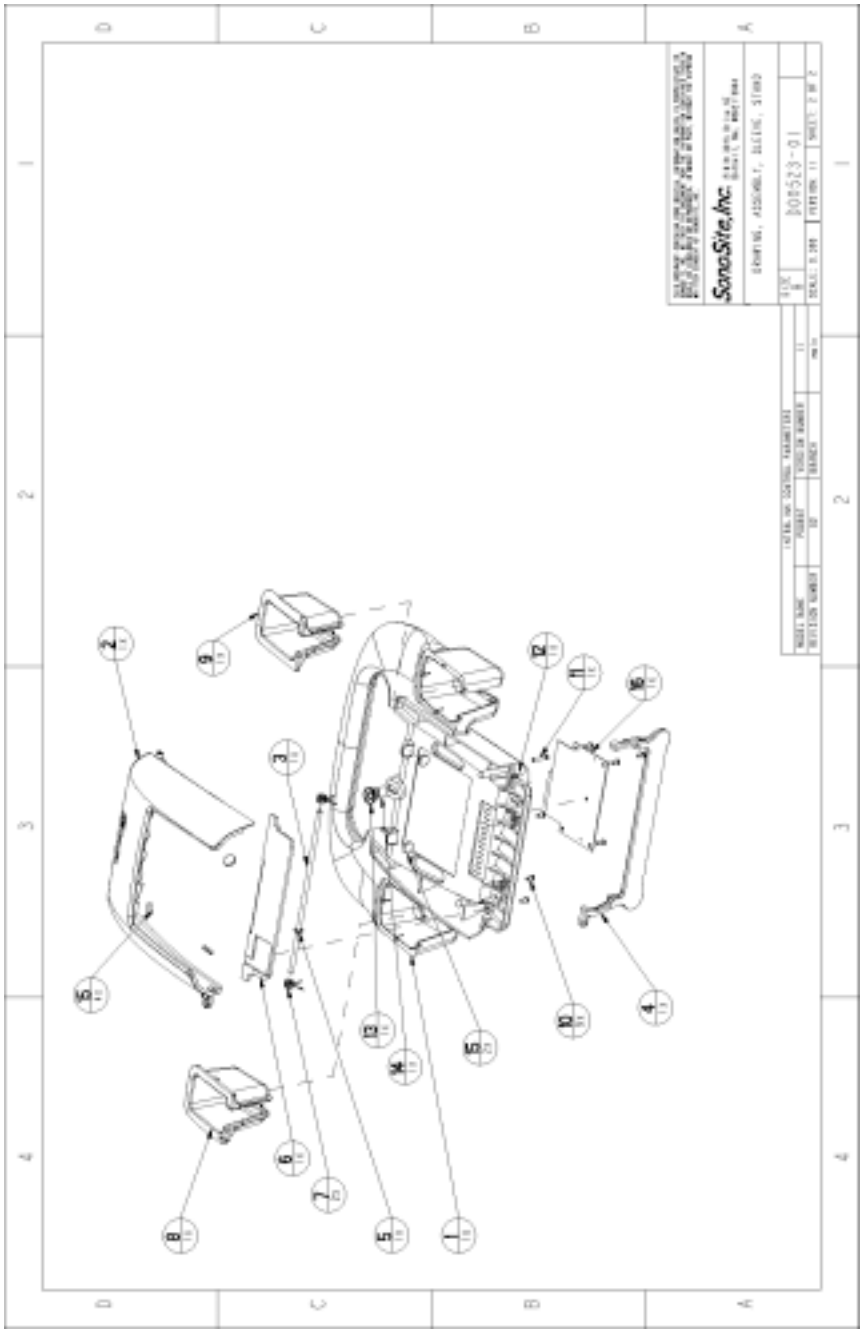


Table A.1 SiteStand Assembly Parts List

FIND NUMBER	QTY	PART NUMBER	DESCRIPTION
1	1	P00981	weldment, body
2	1	P00997	subplate, body, top
3	1	P00998	subplate, body, bottom
4	4	P01500	nut, sleeve, non-locking
5	4	P01499	nut, weld
6	1	P00985	spacer, printer housing
7	1	P00993	housing, printer
8	1	P00589	blade cap
9	23	P01501	screw, shcs,10-32 x .50lg, stl
10	8	P01567	screw, bhcs, 1/4-20 x .625lg,sstl
11	4	P01562	washer, lock, 1/4 inl, stl
12	1	P00987	base, caster
13	4	P01532	washer, lock, 1/2,split,sstl
14	2	P00693	caster
15	2	P00694	caster, nonlocking
16	1	P00994	pedal, actuator
17	1	P00995	tube, vertical
18	1	P00986	housing, bearing
19	2	P00984	ring, bearing
20	2	P00983	ring, retainer, spring
21	1	P00996	plug, float
22	1	P00678	gas spring
23	1	P00991	collar, tilt
24	2	P00980	bushing, flanged, 1/4x .377x.25lg, teflon
25	1	P00989	bracket, tilt
26	1	P00982	bushing, clocking
27	1	P01561	rivet,1/8 x .50 opn end stl
28	1	P00974	plunger, indexing,3/8-24,m5,sstl
29	1	P01497	knob, ball, blk, m5, 20mm
30	1	P00596	plate, sleeve mounting
31	1	P00978	bolt, shoulder,.25 x2.25lg, modified

Table A.1 SiteStand Assembly Parts List, *Continued*

FIND NUMBER	QTY	PART NUMBER	DESCRIPTION
32	1	P00657	assembly, sleeve, stand
33	1	P00976	bumper, elastomeric
34	1	P01055	.25 dia x .500 roll pin
35	1	P00787	screw, K35 x 1.57 x 8 type 1, recess panhead, tf
36	1	P01658	nut, lock, 3/8-24, SSTL
37	1	P01029	screw, shcs, 10-32 x .25lg
38	1	P00908	sitestand support bracket
39	1	P01629	nut, m10 x 1.25 x 7.78
40	1	P00409	assembly, PCB, docking stand
41	1	P01595	assembly, bracket/wiring harness, dock stand
42	1	P00590	cover, connector
43	6	P01566	screw, phpls, 6-32x.50lg
44	1	P01318	shoulder bolt, 1 1/4-inch
45	1	P01319	locknut, nylon-insert, 10-24
	1	P00790	fuse, 6.3 amp, 5 x 20 mm
	1	P01321	foot pedal repair kit
		P00762	printer control cable
		P00764	printer AC power cable
		P00763	BNC to BNC video cable

Table A.2 SiteStand Sleeve Assembly Parts List

FIND NUMBER	QTY	ITEM NUMBER	PART DESCRIPTION
1	1	P00586	base, sleeve
2	1	P00587	lid, sleeve
3	1	P00662	latch pivot rod
4	1	P00588	latch, sleeve
5	1	P00663	e-ring, stand
6	1	P00650	cover, latch mechanism
7	2	P00766	spring, torsion, dock
8	1	P00665	probe insert, right
9	1	P00666	probe insert, left
10	15	P00787	screw, k35x1.57x8,type 1, recess panhead, tf
11	1	P00667	screw, k35x20, cross recess panhead, tf
12	1	P00802	washer, shoulder, nylon, length 13/32
13	2	P00800	washer,flat,#12 ss finishing
14	1	P00669	spring, compression, lid
15	6	P00594	pad, poron,093in thk,.50od
16	1	P00409	assembly, pcb, docking stand

APPENDIX B Service Event Report

The Service Event Report provides information about product failures to the manufacturer and to authorized service facilities, which provide approved warranty services for SonoSite products. For all repairs completed, complete the form and return a copy of it to the following address:

SonoSite, Inc.
Technical Support
21919 30th Drive SE
Bothell, Washington 98021-3904

telephone: 1-877-657-8118 (U.S.)
+425-951-1330 (international)

facsimile: +425-951-1416

e-mail: service@sonosite.com

website: www.sonosite.com
Select **Products**, then Technical Support.

Service Event Report

Service Provider

Name:	Date:
Company:	
Address:	
Phone Number:	Fax Number:
E-mail address:	

Device Description

Name:	Serial Number:	
Part Number:	Lot Number:	Revision:
Software Version:	Other Identifiers:	

Event Description

Diagnosis

Service Performed

Performed By:	Date:
Actions:	

Parts Removed

Part Name	Part Number	Serial Number	Lot Number	Rev	Replaced By

Parts Installed

Part Name	Part Number	Serial Number	Lot Number	Rev	Replaced By

Tests Performed (attach test data)

Test:	Test:
Performed By:	Performed By:
Result: Pass ☐ Fail ☐	Result: Pass ☐ Fail ☐

Attach additional sheets as required

.

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